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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/728,197	12/03/2003	Steven C. Quarre	044182 307083	7284

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EXAMINER

ZEC, FILIP

ART UNIT	PAPER NUMBER
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3744

DATE MAILED: 09/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/728,197

Applicant(s)

QUARRE, STEVEN C.

Examiner

Filip Zec

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 June 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7-15 and 17-20 is/are rejected.
- 7) ☒ Claim(s) 6 and 16 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 June 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Drawings

1. The drawings were received on 6/27/2005. These drawings are acceptable.

Response to Arguments

2. Applicant's arguments, see pages 2-4, filed 6/27/2005, with respect to the rejection(s) of claim(s) 1-20 under 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of U.S. Patent Application Publication 2003/0097845 to Saunders et al. As such, this Office Action is being made non-final to afford the applicants the opportunity to respond to the new grounds of rejection.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-5, 7, 8, 10-15, 17, 18 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 5,332,031 to Kiga, in view of U.S. Patent Application Publication 2003/0097845 to Saunders et al. Kiga discloses applicant's basic inventive concept, a method and apparatus of cooling a charge-coupled device, said method comprising coupling said charge-

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coupled device (7, FIG. 1) to a cold side of a thermoelectric cooling device (9), coupling a hot side of said thermoelectric cooling device to a transfer plate (13), coupling said transfer plate to a heat sink (12a, FIG. 2), interposing a spacer (29) between said charge-coupled device and said cold side of said thermoelectric cooling device, selectively dimensioning said spacer to maximize a surface area of contact between said charge-coupled device and said cold side of said thermoelectric cooling device (col 3, lines 48-52), wherein said interposing comprises selectively dimensioning said spacer to position said hot side of said thermoelectric cooling device in a predetermined location relative to said charge-coupled device, selectively applying a conformal coating to at least one said transfer plate, said thermal barrier, and an interface between said transfer plate and said thermal barrier (col 3, lines 40-42), said mounting comprises isolating heat generated by said thermoelectric cooling device from said charge-coupled device, substantially as claimed with the exception of mounting said transfer plate to a thermal barrier. Saunders shows mounting a transfer plate (12, FIG. 3A) to a thermal barrier (16, FIG. 3A) to be old in the electronics cooling art. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made from the teaching of Saunders to modify the system of Kiga, by mounting said transfer plate to a thermal barrier in order to inhibit the heat transfer through the module interior from the heat releasing thermal conduction layer to the heat absorbing thermal conduction layer ([0011]).

5. Claims 9 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 5,332,031 to Kiga, in view of U.S. Patent Application Publication 2003/0097845 to Saunders et al., as applied to claims 1 and 11 above, and further in view of U.S. Patent 4,253,515 to Swiatosz. Kiga in view of Iwata discloses applicant's basic inventive concept, a method and

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apparatus of cooling a charge-coupled device, substantially as claimed with the exception of using epoxy laminate material to mount said transfer plate. Swiatosz shows a mounting process using epoxy laminate material (col 4, lines 17-19) to be old in the electronics cooling art.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made from the teaching of Swiatosz to modify the system of Kiga in view of Saunders, by using epoxy laminate material for mounting a transfer plate in order to provide optimum insulation and minimum separation between surfaces connected.

Allowable Subject Matter

6. Claims 6 and 16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent 5,254,178 to Yamada, Kenji et al. teaches a thermoelectric transducer apparatus comprising N- and P-type semiconductors and having electronic control capabilities.

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8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Filip Zec whose telephone number is (571) 272-4815. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cheryl Tyler can be reached on 571-272-4834. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Filip Zec
Examiner
Art Unit 3744

FZ


MELVIN JONES
PRIMARY EXAMINER